

**40 CFR 98 Mandatory Reporting of Greenhouse Gases**  
**Subpart W *Petroleum and Natural Gas Systems***  
**Published November 30, 2010 / Effective January 1, 2011**

It requires the following eight industry segments to annually report carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) emissions:

- 1) Offshore petroleum and natural gas production
- 2) **Onshore petroleum and natural gas production**
- 3) **Onshore natural gas processing plants**
- 4) **Onshore natural gas transmission compression**
- 5) Underground natural gas storage
- 6) Liquefied natural gas (LNG) storage
- 7) LNG import and export equipment
- 8) Natural gas distribution

This rule summary specifically addresses segments 2, 3, and 4.

**APPLICABILITY**

- 40 CFR 98 Subpart W applies to facilities with carbon dioxide equivalent (CO<sub>2</sub>e) emissions greater than 25,000 metric tons or more per year beginning in 2011.
- A facility is defined differently for each of the industry segments. For the Onshore natural gas processing plants and Onshore natural gas transmission compression segments, a facility is defined by their physical boundaries and ownership structures traditionally used to define a facility.
- For the Onshore petroleum and natural gas production segment facilities include “all petroleum or natural gas equipment on a well pad or associated with a well pad and CO<sub>2</sub> EOR operations that are under common ownership or common control including leased, rented, or contracted activities by an onshore petroleum and natural gas production owner or operator and that are located in a single hydrocarbon basin...”
- Per the AAPG Geological Province Map (available at [www.aapg.org](http://www.aapg.org) in pdf or GIS format), hydrocarbon basins within the Barnett Shale Fort Worth Basin include:
  - 350 South Oklahoma folded belt
  - 400 Ouachita folded belt
  - 415 Strawn basin
  - 420 Fort Worth syncline
  - 425 Bend arch
- When determining applicability, each facility must include combustion emissions from portable equipment that cannot move on roadways under its own power and drive train and that is stationed at a wellhead for more than 30 days in a reporting year, including drilling rigs, dehydrators, compressors, electrical generators, steam boilers, and heaters. Gathering lines associated with production wells and natural gas processing plants should also be included.
- Emissions from gathering lines and boosting stations are currently not required to be reported.

## **MONITORING**

- The Onshore petroleum and natural gas production segment requires an equipment count in order to determine fugitive emissions.
- The Onshore natural gas processing plants and Onshore natural gas transmission compression segments require that fugitive emissions sources and emission rates be determined once per year using an optical gas imaging instrument per the *Alternative work practice for monitoring equipment leaks* (AWP), Method 21, or infrared laser beam illuminated instrument.

## **REPORTING**

- Data collection began January 1, 2011 for facilities not already reporting but required to report under Subpart W.
- The first report is due March 31, 2012 and every year thereafter.
- Reports must be submitted electronically through e-GGRT.
- Submit a Certification of Representation form at least 60 days before March 31, 2012 (i.e. no later than January 30, 2012).
- Emissions must be reported in aggregate by industry segment and source type (see *Table 1*).
- Each source type has been designated a GHG calculation methodology.
- GHG reporting for combustion sources, other than flares, must use Subpart C methods and procedures.

## **RECORDKEEPING**

- Keep a record of all data required to conduct GHG emissions calculations such as equipment population counts (i.e. pneumatic bleed devices, pumps, wells vented to the atmosphere), total instances of operations conducted (i.e. well completions, compressor blowdowns), annual throughput of natural gas or other products, laboratory analyses, and fugitive emissions monitoring.
- Record the results of all emissions measurements with their date, time, location, and operating condition.
- Keep calibration reports for detection and measurement instruments.
- Record calculation variables as well as computer model input/output data used for engineering estimation of emissions.
- Prepare a GHG Monitoring Plan that includes:
  - Identification of positions of responsibility for data collection
  - Explanation of the processes and methods used for data collection
  - Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all flow meters and other instrumentation used to provide data for GHG reporting including calibration, calibration accuracy, and associated technical justifications.

<b>Table 1: Source Types by Industry Segment</b>			
<b>Source Type</b>	<b>Onshore Production</b>	<b>Natural Gas Processing</b>	<b>Natural Gas Transmission Compression</b>
Natural gas pneumatic device venting	X		X
Natural gas driven pneumatic pump venting	X		
Acid gas removal vent	X	X	
Dehydrator vent	X	X	
Well venting for liquids unloading	X		
Gas well venting during well completions and workovers with hydraulic fracturing	X		
Gas well venting during well completions and workovers without hydraulic fracturing	X		
Blowdown vent stacks	X	X	X
Onshore production storage tanks	X		
Transmission storage tanks			X
Well testing venting and flaring	X		
Associated gas venting and flaring	X		
Flare stacks	X	X	
Centrifugal compressor venting	X	X	X
Reciprocating compressor rod packing venting	X	X	X
Other emissions from equipment leaks	X	X	X
Population Count and Emissions Factor	X		
Enhanced Oil Recovery hydrocarbon liquids dissolved CO <sub>2</sub>	X		
Enhanced Oil Recovery injection pump blowdown	X		
Onshore Petroleum and Natural Gas Production and Natural Gas Distribution Combustion Emissions	X		